PG26 PG:jar 8/21/95

:]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Michael W. Heartlein and Jeffrey F. Lemontt

Serial No.:

08/470,058

Filed:

June 6, 1995

Title:

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A

SELECTED SUBSTANCE INTO CELLS

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

Paletics, Washington, D.C. 20

9 · 2 7 - 95 Date

Signature

Typed or printed name of person signing certificate

CONSENT OF ASSIGNEE TO INVENTORSHIP CHANGE

The Assistant Commissioner FOR Patents

Washington, D.C. 20231

Sir:

Transkaryotic Therapies, Inc., a Delaware corporation, is the assignee of the above-identified application and does hereby consent to the addition of Michael F. Concino as a co-inventor in the application. A Certificate under 37 C.F.R. §3.73(b) specifying that the evidentiary document establishing ownership of the above-identified application in Transkaryotic Therapies, Inc. has

JC945 U.S. PTO 09/753385 been reviewed and which certifies that, to the best of my knowledge and belief, title is in Transkaryotic Therapies, Inc. is being filed concurrently.

Respectfully submitted

Richard F Selden, Founder and Chief Executive Officer for Transkaryotic Therapies, Inc.

Cambridge, MA 02139

Date: 041487

Applica	nt(s):	Michael W. Heartlein and Jeffrey F. Lemontt	38. 38.
		No: 08/470,058Filed:	09/75 09/75
For:			JC JC
		Substance into Cells	
Trai	nska	aryotic Therapies, Inc. a Delaware corporation	
		of Assignee) (Type of Assignee, e.g. corporation, partnership, university, government	ಚ ತಿಕ್ಷವಾದ್ಗಳ, ಮಾ
certifies	that it	t is the assignee of the entire right, title and interest in the patent application identified above by virtue of either	r:
A. [X]	An a	assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the Trademark Office at Reel, Frame, or for which a copy thereof is a	e Patent ttached.
OR			
B. []	A ch	hain of title from the inventor(s) of the patent application identified above, to the current assignee as shown be	:low:
	1.	From: To:	
	••	The document was recorded in the Patent and Trademark Office at	
		Reel Frame or for which a copy thereof is attached.	
	2.	From: To:	
	۷.	The document was recorded in the Patent and Trademark Office at	
		Reel, Frame, or for which a copy thereof is attached.	
	,	From: To:	
	3.	The document was recorded in the Patent and Trademark Office at	
	•	Reel frame or for which a copy thereof is attached.	
	[]	Additional documents in the chain of title are attached.	
_ [] Co	pies of	of assignments or other documents in the chain of title are attached.	
The undersi	dersign gned's	ned has reviewed all the documents in the chain of title of the patent application identified above and, to the backworkedge and belief, title is in the assignee identified above.	est of
The un	dersign	ned (whose title is supplied below) is empowered to act on behalf of the assignee.	
belief a	re beli e. are 1	are that all statements made herein of my own knowledge are true, and that all statements made on information ieved to be true; and further, that these statements are made with the knowledge that willful false statements a punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that statements may jeopardize the validity of the application or any patent issuing thereon.	nd the lik
Date	:	191595	
Name	:	Richard F Selden	
Title	:	: Founder and Chief Executive Officer	
Ciana		· Ille I vol	

ASSIGNMENT

WHEREAS, we, Michael W. Heartlein, Jeffrey F. Lemontt and Michael F. Concino have invented a certain improvement in "Chimeric Proteins for Use in Transport of a Selected Substance into Cells" described in an application for Letters Patent of the United States, Serial No. 08/470,058, filed June 6, 1995.

WHEREAS, TRANSKARYOTIC THERAPIES, INC. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at 195 Albany Street, Cambridge, Massachusetts 02139, desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of the said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of

testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below. State/Commonwealth Then personally appeared before me the above-named Michael W. Heartlein and acknowledged that he executed the foregoing instrument as his free act and deed this /37/ day of foregoing., 19/5. Notary Public nd NONEY (print name) (SEAL) My Commission expires -State/Commonwealth Then personally appeared before me the above-named Jeffrey F. Lemontt and acknowledged that he executed the foregoing instrument as his free act and deed this 13th day of Lecture, 1993. Notary Public PNONA) (print name) (SEAL) My Commission expires 9/20/96

State/Commonwealth

of Manufurth

County of Mullipse

Then personally appeared before me the above-named

Michael F. Concino and acknowledged that he
executed the foregoing instrument as his free act and
deed this 17th day of Apply 1995.

(SEAL)

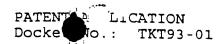
Notary Public

(SEAL)

My Commission expires 9 / 20 / 94

PG36/TKT93-01.A6G





IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:

Michael W. Heartlein and Jeffrey F. Lemontt

Serial No.:

08/470,058

Filed:

June 6, 1995

For:

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A

SELECTED SUBSTANCE INTO CELLS

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

on <u>9-27-95</u>

Date

JOAN Z. GRAHAN

Typed or printed name of person signing certificate

TRANSMITTAL OF DECLARATION/POWER OF ATTORNEY

Box Missing Part
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

In response to the Notice to File Missing Parts dated July 27, 1995, enclosed herewith is an executed Declaration/Power of Attorney for filing in the captioned application. A petition for a one-month extension of time and the appropriate fee are being filed concurrently. A copy of the Notice is attached together with a check in the amount of \$65.00 in payment of the surcharge.

3C945 U.S. PTO 09/753385 PG26 PG:jar/jzg 09/12/95

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:

Michael W. Heartlein and Jeffrey F. Lemontt

Serial No.:

08/470,058

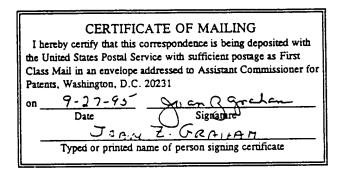
Filed:

June 6, 1995

Title:

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A

SELECTED SUBSTANCE INTO CELLS



STATEMENT OF FACTS BY MICHAEL W. HEARTLEIN AND JEFFREY F. LEMONTT

The Assistant Commissioner for Patents Washington, D.C. 20231

Sir:

Michael W. Heartlein and Jeffrey F. Lemontt, of 167 Reed Farm Road, Boxborough, Massachusetts 01719 and 165 Fairway Drive, West Newton, Massachusetts 02165, respectively, declare and state that:

1. We are joint inventors of a patent application filed on behalf of Transkaryotic Therapies, Inc. and claiming chimeric proteins which comprise a functional domain and a carrier domain, nucleic acids encoding such chimeric proteins and uses therefor. We have been informed that this patent application was granted a



filing date of June 6, 1995 and given Serial No. 08/470,058 by the United States Patent and Trademark Office.

- 2. We have been given a complete copy of U.S. Patent Application Serial No. 08/470,058 as it was originally filed on June 6, 1995, and we have studied this material prior to making this Statement of Facts document.
- 3. We understand that the patent laws of the United States require that each designated inventor must have made a material contribution to the conception of the invention claimed in the U.S. patent application.
- 4. Michael F. Concino did materially contribute to the conception of the invention claimed in Serial No. 08/470,058 as filed. Therefore, it is our belief that he is a joint inventor of the invention claimed in U.S. Patent Application Serial No. 08/470,058.
- 5. At the time the application was filed, Michael F. Concino was not designated a co-inventor when, in fact, he was a co-inventor and should be so designated.
- 6. At the time the above-referenced application was filed, we did not understand the law of inventorship and the concept of "material contribution" and as a result, Michael F. Concino was not named as an inventor on this document.
- 7. The possibility of an unintentional error in inventorship was brought to the attention of Patricia Granahan (Reg. No. 32,227), the Attorney at Hamilton, Brook, Smith & Reynolds, P.C. (HBSR) for Transkaryotic Therapies, Inc. by Linda M. Chinn, Esq., Manager of Intellectual Property, Transkaryotic Therapies, Inc.

8. Our decision not to include Michael F. Concino as an inventor in the above-identified patent application was without any deceptive intention.

We further declare that all statements made herein of our knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Michael W. Heartlein

7-1001

Jeffrey f. Lemontt

September 13, 1995

C.F.R. §1.56.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

<u>Declaration</u> for Patent Application

As a named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name;

I believe I am the original, first and sole inventor (if only one name is listed) or an original, first and joint inventor (if plural names are listed in the signatory page(s) commencing at page 3 hereof) of the subject matter which is claimed and for which a patent is sought on the invention entitled

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A SELECTED	SUBSTANCE INTO CELLS		
the specification of which (check one)			
[X] is attached hereto.			
[] was filed on	as		
I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.			
I acknowledge the duty to disclose info	mation which is		

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

known by me to be material to patentability as defined in 37

Prior Foreign Application(s) Priority Claimed [] [](Day/Month/Year filed) (Number) (Country) Yes No [] (Day/Month/Year filed) (Number) (Country) No [] (Day/Month/Year filed) (Number) (Country)

and

I hereby claim the benefit under Title 35, United States Code, \$120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information known by me to be material to patentability as defined in 37 C.F.R. §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.) (Filing date) (Status, patented, pending, abandoned)

(Application Serial No.) (Filing date) (Status, patented, pending, abandoned)

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

I also hereby grant additional Powers of Attorney to the following attorney(s) and/or agent(s) to file and prosecute an international application under the Patent Cooperation Treaty based upon the above-identified application, including a power to meet all designated office requirements for designated states.

David E. Brook	Registration No.	22,592
James M. Smith	Registration No.	28,043
Leo R. Reynolds	Registration No.	20,884
Richard A. Wise	Registration No.	18,041
Patricia Granahan	Registration No.	32,227
Mary Lou Wakimura	Registration No.	31,804
Thomas O. Hoover	Registration No.	
Alice O. Carroll	Registration No.	
N. Scott Pierce	Registration No.	

all of Hamilton, Brook, Smith and Reynolds, P.C., Two Militia Drive, Lexington, Massachusetts 02173;

Send correspondence to: Patricia Granahan, Esq.	
Hamilton, Brook, Smith & Reynolds, P.C. Two Militia Drive, Lexington, MA 02173	
Direct telephone calls to: Patricia Granahan, Esq.	
617-861-6240	
017-001-0240	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole	
or first inventor	Michael W. Heartlein
Inventor's	
Signature	Date 167 Reed Farm Road
kesidence	
Citizenship	Boxborough, Massachusetts 01719 U.S.A.
Post Office Address	U.S.A.
Post office Address	same as above
Full name of second joint	
inventor, if any	Jeffrey F. Lemontt
Second Inventor's	
Signature	Date 165 Fairway Drive West Newton, Massachusetts 02165
Residence	165 Fairway Drive
	West Newton, Massachusetts 02165
CILIZENSHIU	31 C A
Post Ullice Address	same as above
•	
Full name of third joint	-
inventor, if any	•
Third Inventor's	
Signature	Date
Kesidence	
Citizenship	
CitizenshipPost Office Address	
Post Office Address	
Full name of fourth joint	
inventor, if any	
Fourth Inventor's	
Signature	Date
Residence	Date
Citizenship	
Citizenship	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Declaration for Patent Application

As a named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name;

I believe I am the original, first and sole inventor (if only one name is listed) or an original, first and joint inventor (if plural names are listed in the signatory page(s) commencing at page 3 hereof) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Chimeric Proteins	for Use in Trans	port of a Selected	
Substance into Ce			
the specification of whi	ch (check one)		
[] is attached hereto		_	
(X) was filed onJt	ine 6, 1995	as United States App	lication
Number or PCT Inte	ernational Applicat	ion Serial No. 08/470,	058
and was amended or	n	(if applicable).	_
above-identified specificamendment referred to a	bove.		
be material to patentab	Ilità sa dellued in	nformation which is known 37 C.F.R. §1.56.	
I hereby claim for Code, \$119 of any foreilisted below and have a or inventor's certification which priority is claim.	gn application(s) in light specified below the having a filing aimed:	date before that of the	on for patent
	Prior Foreign App	olication(s)	Priority Not Claimed
	(Country)	(Day/Month/Year filed)	[1 .
(Number)	(Country)	(Day/Month/Year filed)	[]
(Number)	·	(Day/Month/Year filed)	[]
(Number) I hereby claim the ben provisional application	efit under 35 U.S.C	. §119(e) of any United	States
(Application Number)		(Filing Date)	
(Application Number)		(Filing Date)	•

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information known by me to be material to patentability as defined in 37 C.F.R. §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.) (Filing date) (Status, patented, pending, abandoned) (Application Serial No.) (Filing date) (Status, patented, pending, abandoned) As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. I also hereby grant additional Powers of Attorney to the following attorney(s) and/or agent(s) to file and prosecute an international application under the Patent Cooperation Treaty based upon the above-identified application, including a power to meet all designated office requirements for designated states: Reg. No. 32,470 Reg. No. 33,542 Reg. No. 22,592 Thomas O. Hoover David E. Brook Alice O. Carroll Reg. No. 28,043 James M. Smith Reg. No. 34,900 Leo R. Reynolds Reg. No. 20,884 Patricia Granahan Reg. No. 32,227 N. Scott Pierce Reg. No. 18,041 Richard A. Wise Mary Lou Wakimura Reg. No. 31,804 all of Hamilton, Brook, Smith and Reynolds, P.C., Two Militia Drive, Lexington, Massachusetts 02173; and send correspondence to: Patricia Granahan, Esq., Hamilton, Brook, Smith & Reynolds, P.C. Two Militia Drive, Lexington, MA 02173 Patricia Granahan, Esq. Direct telephone calls to: Hamilton, Brook, Smith & Reynolds, P.C. Two Militia Drive, Lexington, MA I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. Full name of sole Michael W. Heartlein or first inventor Inventor's Signature 1 167 Reed Farm Road Residence 01719 MA Boxborough, U.S.A. Citizenship Post Office Address ___ same

full name of second joint		
inventor, if any	Jeffrey F.	Lemontt
second Inventor's () //	4 4. A	Date Sept 12, 1991
Signature 165 Fair	1. Homel 1	Date
Residence 165 Rair	way Drive	
West New	ton, MA UZIO:	
Citizenship U.S.A.		
Post Office Address	same	
Full name of third joint	Michael F	Concino
inventor, if any		
Third Investor's		Date Sept 11, 1995
	stane Poad	Nace Advers
X6HIGENCE	stane Road	
	MA 02159	
Citizenship U.S.A.		
Post Office Address	same	
Full name of fourth joint		
inventor, if any	,	
Fourth Inventor's		Baha
Signature		Date
Residence		
Citizenship		
Post Office Address		
Full name of fifth joint		•
inventor, if any		
Fifth Inventor's	·	Baha
Signature		Date
Residence		
Citizenship		
Post Office Address		

Applicant or Patentee: Michael W. Hoartlean and Jeff. 49 F. Attorney's			
Serial or Patent No.: 08/470.058 Lemonti Docket No.: TKT93-01			
Piled or Issued: June 6, 1995			
FOR: CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A SELECTED SUBSTANCE INTO CELLS			
VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) and 1.27(c) - SMALL BUSINESS CONCERN I hereby declare that I am			
[] the owner of the small business concern identified below:			
[x] an official of the small business concern empowered to act on behalf			
of the concern identified below:			
NAME OF CONCERN Transkaryotic Therapies, Inc.			
ADDRESS OF CONCERN_ 195 Albany Street			
Cambridge, Massachusetts 02139			
I hereby declare that the above identified small business concern qualifies			
as a small business concern as defined in 13 CFR 121.12, and reproduced in			
37 CFR 1.9(d), for purposes of paying reduced fees to the United States			
Patent and Trademark Office, in that the number of employees of the			
concern, including those of its affiliates, does not exceed 500 persons.			
For purposes of this statement, (1) the number of employees of the business			
concern is the average over the previous fiscal year of the concern of the			
persons employed on a full-time, part-time or temporary basis during each			
of the pay periods of the fiscal year, and (2) concerns are affiliates of			
each other when either, directly or indirectly, one concern controls or has			
the power to control the other, or a third party or parties controls or has			
the power to control both.			
I hereby declare that rights under contract or law have been conveyed to			
and remain with the small business concern identified above with regard to			
the invention, entitled CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A SELECTED SUBSTANC			
INTO CELLS by inventor(s) Michael W. Heartlein and Jeffrey F. Lemontt			
described in			
[] the specification filed herewith			
[X] application serial no. 08/470,058 , filed June 6, 1995			
[] patent no, issued			

If the rights held by the above identified small business concern are not exclusive, each dividual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 GFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small process concern under 37 GFR 1.9(d), or a nonprofit reganization under 37 GFR 1.9(e). *NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 GFR 1.27)

[] INDIVIDUAL [] SHALL]	BUSINESS CONCERN [] NONPROFIT ORGANIZATION
CAME	·
\DDRESS	
[] INDIVIDUAL [] SMALL I	BUSINESS CONCERN [] NONPROFIT ORGANIZATION
	in this application or patent, notifica-
•	sulting in loss of entitlement to small
entity status prior to paying, o	or at the time of paying, the earliest of
he issue fee or any maintenance	fee due after the date on which status
s a small entity is no longer a	appropriate. (37 CFR 1.28(b))
hereby declare that all states	ments made herein of my own knowledge are
rue and that all statements mad	e on information and belief are believed
	se statements were made with the knowledge
	d the like so made are punishable by fine
•	section 1001 of Title 18 of the United
•	ul false statements may jeopardize the
	patent issuing thereon, or any patent to
hich this verified statement is	_
nici cuis verilled soutement 10	difactad.
AME OF PERSON SIGNING	Richard F Selden
ITLE OF PERSON OTHER THAN OWNER	President and Chief Executive Officer
ddress of person signing	Transkaryocic Therapies, Inc.
. 195 Albany/Screet, Cambridge, Mas	sachusetts 02139

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